

Amendments to Claims

1. (Currently Amended) Apparatus for cooling a bundle of capillary tubes to prevent overheating of the tubes during a parallel capillary electrophoresis procedure, said apparatus comprising

5 [[a]] an inner jacket of thermally conductive solid material comprising mating inner jacket members movable between an open position in which the inner jacket members are separated to allow placement of the bundle in the inner jacket and a closed position in which the inner jacket members are mated together and the bundle is disposed inside the inner jacket in thermally conductive relation with the inner jacket, and

10 an outer jacket of thermally conductive solid material around the inner jacket and in thermally conductive relation therewith, said outer jacket comprising mating outer jacket members movable between an open position in which the outer jacket members are separated and a closed position in which the outer jacket members are mated together around the inner jacket, and

15 ~~window openings in~~ said mating inner and outer jacket members defining a window to permit the passage of light through the window and the capillary tubes of the bundle at the location of the window.

2. (Currently Amended) Apparatus as set forth in claim 1 further comprising a cushion of thermally conductive, cushioning material inside the inner jacket and in thermally conductive relation with the inner jacket for cushioning the bundle when the inner jacket members are in said closed position.

3. (Currently Amended) Apparatus as set forth in claim 2 further comprising fasteners for drawing the mating inner jacket members together and causing the cushion inside the inner jacket members to press against said bundle.

4. (Currently Amended) Apparatus as set forth in claim 1 wherein said inner jacket is of an electrically insulating material.

5. (Currently Amended) Apparatus as set forth in claim 4 wherein said inner jacket is of a ceramic-like material having a thermal conductivity in the range of about 5-50 W/m-K, and a dielectric strength in the range of about 20-400 kV/mm.

6. (Currently Amended) Apparatus as set forth in claim 5 wherein said inner jacket is of boron nitride.

7. (Currently Amended) Apparatus as set forth in claim 5 wherein said inner jacket members comprise a pair of opposing slabs, each slab having a generally channel shape and defining a recess therein.

8. (Currently Amended) Apparatus as set forth in claim 7 further comprising a cushion of thermally conductive, cushioning material disposed inside the recesses of said slabs for cushioning the bundle when the inner jacket members are in said closed position.

9. (Original) Apparatus as set forth in claim 8 wherein said cushion has a thermal conductivity in the range of about 3-9 W/m-K.

10. (Currently Amended) Apparatus as set forth in claim 8 further comprising fasteners for drawing the mating inner jacket members together and causing the cushion inside the inner jacket members to press against said bundle.

11. (Currently Amended) Apparatus as set forth in claim 1 wherein said inner jacket members have opposing surfaces coated with an electrically insulating material.

12. (Canceled)

13. (Canceled)

14. (Currently Amended) Apparatus as set forth in claim ~~12~~ 1 wherein said inner and outer jackets are elongate for covering a major portion of the length of the bundle and have approximately equal lengths. ~~lengths, and wherein said outer jacket members have window openings therein aligned with the window openings in the inner jacket when the jackets are closed.~~

15. (Original) Apparatus as set forth in claim 14 wherein said outer jacket members have recesses therein for receiving respective inner jacket members.

16. (Currently Amended) Apparatus as set forth in claim ~~12~~ 1 further comprising a heat sink on at least one of said mating outer jacket members.

17. (Currently Amended) A combination of the apparatus set forth in claim ~~12~~ 1 and a bundle of capillary tubes inside the inner and outer jackets, said jackets extending over at least 50% of the overall length of the capillary bundle.

18. (Currently Amended) A combination of the apparatus set forth in claim 1 and a bundle of capillary tubes inside the inner jacket, said inner jacket extending over at least 50% of the overall length of the capillary bundle.

19. (Currently Amended) Apparatus for cooling a bundle of capillary tubes to prevent overheating of the tubes during a parallel capillary electrophoresis procedure, said apparatus comprising

an inner jacket of thermally conductive, electrically insulating solid material comprising mating inner jacket members movable between an open position in which the inner jacket members are separated to allow placement of the bundle in the inner jacket and a closed position in which the inner jacket members are mated together and the bundle is disposed inside the inner jacket in thermally conductive relation with the inner jacket,

an outer jacket of thermally conductive solid material comprising mating outer jacket members movable between an open position in which the outer jacket members are separated and a closed position in which the outer jacket members are mated together around the inner jacket and in thermally conductive relation therewith,

a cushion of thermally conductive, cushioning material disposed inside the inner jacket for cushioning the bundle when the inner and outer jacket members are in said closed position, and

~~a window through~~ said mating inner and outer jacket members defining a window for permitting the passage of light through the window and the tubes of the bundle at the location of the window.

20. (Original) Apparatus as set forth in claim 19 wherein said inner jacket is of a ceramic-like material having a thermal conductivity in the range of about 5-50 W/m-K and a dielectric strength in the range of about 20-400 kV/mm.

21. (Currently Amended) Apparatus as set forth in claim 20 wherein said inner jacket is of ~~boro~~ boron nitride.

22. (Original) Apparatus as set forth in claim 19 wherein said inner jacket comprises a pair of opposing channel-shaped slabs defining recesses for receiving said cushion therein.

23. (Original) Apparatus as set forth in claim 19 further comprising fasteners for drawing the mating outer and inner jacket members together and causing the cushion inside the inner jacket members to press against said bundle.

24. (Original) Apparatus as set forth in claim 19 wherein said inner and outer jackets are elongate for covering a major portion of the length of the bundle and have approximately equal lengths.

25. (Original) Apparatus as set forth in claim 19 further comprising a heat sink on at least one of said mating outer jacket members.

26. (Original) A combination of the apparatus set forth in claim 19 and a bundle of capillary tubes inside the inner and outer jackets, said jackets extending over at least 50% of the overall length of the capillary bundle.

27 - 30. (Canceled).

31. (New) Apparatus for cooling a bundle of capillary tubes to prevent overheating of the tubes during a parallel capillary electrophoresis procedure, said apparatus comprising

an inner jacket of thermally conductive solid material comprising mating inner jacket members movable between an open position in which the inner jacket members are separated to allow placement of the bundle in the inner jacket and a closed position in which the inner jacket members are mated together and the bundle is disposed inside the inner jacket in thermally conductive relation with the inner jacket,

an outer metal jacket around the inner jacket and in thermally conductive relation therewith, said outer jacket comprises mating outer jacket members having recesses therein for receiving respective inner jacket members, said outer jacket members being movable between an open position in which the outer jacket members are separated and a closed position in which the outer jacket members are mated together around the inner jacket with the inner jacket members received in respective recesses of the outer jacket members,

said mating inner and outer jacket members defining a window to permit the passage of light through the window and the capillary tubes of the bundle at the location of the window, and

wherein said inner and outer jackets are elongate for covering a major portion of the length of the bundle and having approximately equal lengths, and wherein said outer jacket members have window openings therein aligned with window openings in the inner jacket when the jackets are closed.

32. (New) Apparatus for cooling a bundle of capillary tubes to prevent overheating of the tubes during a parallel capillary electrophoresis procedure, said apparatus comprising

an inner jacket of thermally conductive, electrically insulating solid material comprising mating inner jacket members movable between an open position in which the inner jacket members are separated to allow placement of the bundle in the jacket and a closed position in which the inner jacket members are mated together and the bundle is disposed inside the inner jacket in thermally conductive relation with the inner jacket,

an outer jacket of thermally conductive solid material comprising mating outer jacket members movable between an open position in which the jacket members are separated and a closed position in which the jacket members are mated together on opposite sides of the inner jacket and in thermally conductive relation therewith,

a cushion of thermally conductive, cushioning material disposed inside the inner jacket for cushioning the bundle when the inner and outer jacket members are in said closed position, and

15 a mechanism for moving the inner jacket members closer together to press the cushion against said bundle,

said mating inner and outer jacket members defining a window for permitting the passage of light through the window and the tubes of the bundle at the location of the window.

33. (New) Apparatus as set forth in claim 32 wherein said inner jacket members define a shallow recess extending between opposite ends of the inner jacket members for receiving said bundle of capillary tubes with the tubes arranged side-by-side in the recess with no intervening structure between the tubes.

34. (New) Apparatus as set forth in claim 32 wherein said inner and outer jacket members are cooled without the aid of one or more thermoelectric devices.

35. (New) Apparatus for cooling a bundle of capillary tubes to prevent overheating of the tubes during a parallel capillary electrophoresis procedure, said apparatus comprising

5 an inner jacket of thermally conductive, electrically insulating solid material comprising mating inner jacket members movable between an open position in which the inner jacket members are separated to allow placement of the bundle in the jacket and a closed position in which the inner jacket members are mated together and define a shallow recess extending between opposite ends of the inner jacket members for receiving said bundle of capillary tubes with the tubes arranged side-by-side in the recess with no intervening structure between the tubes and with the tubes in thermally conductive relation with the inner jacket,

10 an outer jacket of thermally conductive solid material comprising mating outer jacket members movable between an open position in which the jacket members are separated and a closed position in which the jacket members are mated together on opposite sides of the inner jacket and in thermally conductive relation therewith, and

15 a cushion of thermally conductive, cushioning material disposed inside the inner jacket for cushioning the bundle when the inner and outer jacket members are in said closed position,

 said mating inner and outer jacket members defining a window for permitting the passage of light through the window and the tubes of the bundle at the location of the window.